

Bundle 2 Review: Intro to Cell Theory

Objectives:

- I understand that all organisms are composed of one or more cells.
- I can describe cell theory.
- I can explain why cell theory is important.
- I can recognize that the presence of a nucleus determines whether a cell is prokaryotic or eukaryotic.
- I can describe how a cell's structure helps its function.

Structure: form/shape

Function: role/job

Cell Theory:

- All organisms are made of cells
- The cell is the basic unit of life in biotic organisms
- Cells come from other cells through cell division

Other Important Information

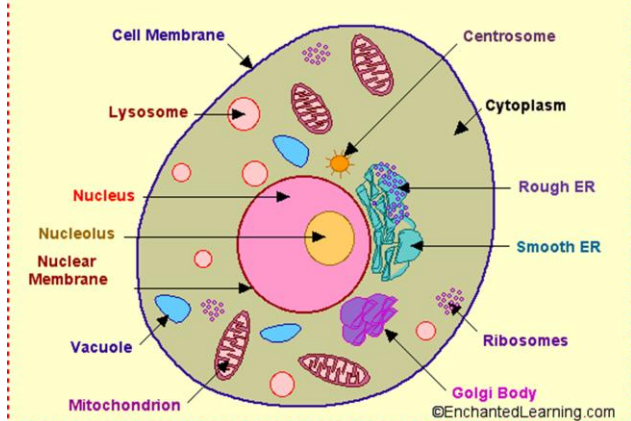
- Plant cells are different from animal cells
Plant cells contain cell walls, large vacuoles and chloroplasts
- The shape of a cell is directly related to its function:

Nerve cells (long telephone wire-like to carry information)

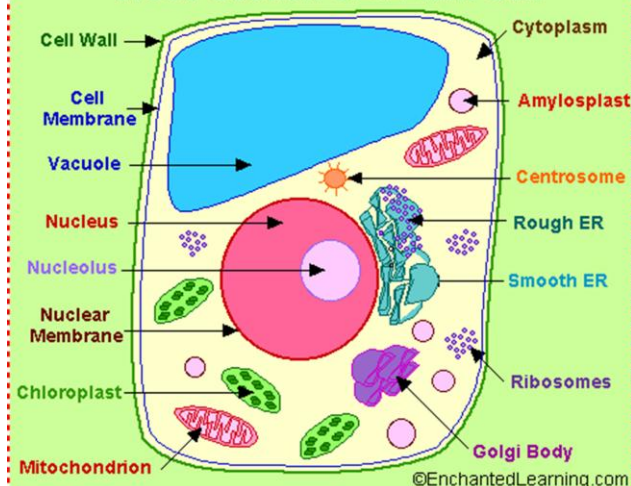
Muscle cells (long, connecting fibers to pull and contract)

Red blood cell (round and cup-like to move easily through tiny blood vessels)

Cross-Section of an Animal Cell



Cross-Section of a Plant Cell



Cell Structure and Function

Motility (for moving around):



Cilia:

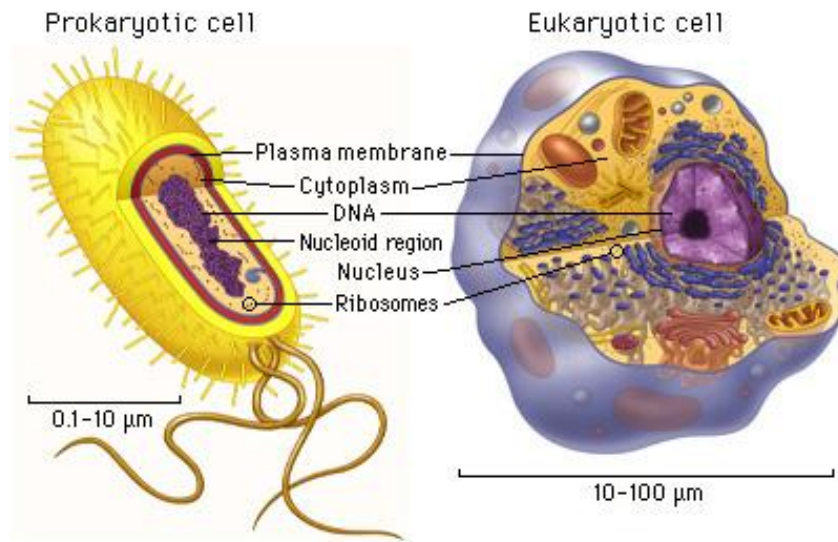
Paramecium



Flagellum/Flagella:

Essential Questions:

1. What is cell theory?
2. What is the difference between a prokaryotic and a eukaryotic cell?



Prokaryotes	Eukaryotes
simple cells	complex cells
no nucleus	true nucleus
bacteria (Archaeobacteria, Eubacteria)	Protista, Fungi, Plantae, Animalia

Organelle	Structure	Function
Cell membrane	Thin outer coating	Protects cell
Nucleus	Large, circular	Controls cell functions
Cilia	Short, hair-like structures on outside of cell	Helps with locomotion
Flagellum	Long, whip-like structure	Helps cell move
Mitochondria	Oval shaped	Breaks down fats and carbohydrates to release energy
Vacuole	Usually large and circular	Storage
Chloroplast	Oval structure with green pigment from chlorophyll	Transforms light energy into chemical energy (food for the plant)

Other things to consider ...

- Cells are systems made of smaller non-living parts. Cells combine together to make other systems.
- How does cell theory explain how living things grow?